

Claims

1. A method of coating a paper/board web with a plane-fed curtain coater, comprising a nozzle beam (40) provided with at least one feed chamber (12) and a
5 nozzle slot (30) in connection therewith for feeding at least one layer of coating material onto a flow plane (35) established by the nozzle beam (40),
characterized in that the method comprises determining the cross-thickness profile of said at least one coating material layer (2) on top of the flow plane (35) downstream of the feed slot (30) associated with the discussed layer, and that, on
10 the basis of the thus discovered cross-thickness profile of said at least one coating material layer (2), the feed rate of the coating material layer from the feed chamber (12) to the feed slot (30) is subjected to a manipulation profiled crosswise of a web (W) to achieve a desired cross-profile for said at least one coating material layer.
- 15 2. A method as set forth in claim 1, **characterized** in that the total thickness and cross-profile of a coating to be established on the web (W) are regulated by measuring on the flow plane (35) the cross-thickness profile of each of the coating material layers providing the coating, and by using the measurement as a basis for regulating the feed rate of each feed slot (30).
- 20 3. A method as set forth in claim 1 or 2, **characterized** in that it further comprises a by-pass of the coating material feed for regulating the cross-profile of said coating material layer (2).
- 25 4. A method as set forth in any of claims 1-3, **characterized** in that the measurement is conducted by means of at least one measuring sensor (44) based on a non-contact measuring process.
- 30 5. A method as set forth in claim 4, **characterized** in that said at least one measuring sensor (44) is adapted for a displacement lengthwise of the nozzle beam (40), such that said measurement is conductible with said sensor essentially across the entire width of the web (W).

6. A method as set forth in any of claims 1-5, **characterized** in that said determination of the crosswise profile of a coating material layer is based on measuring the surface speed of a coating which flows along the flow plane (35).

5 7. A method as set forth in any of claims 1-6, said method comprising the use of a nozzle beam (40), which is adapted to extend in its lengthwise direction across a web (W) to be coated and which is provided with at least one feed chamber (12) extending lengthwise of the coater and supplied with a coating material, and with a nozzle slot (30) in flow communication with said at least one feed chamber, which
10 also extends lengthwise of the coater and which is supplied with a coating material from a respective feed chamber over the entire lengthwise extent of the feed slot and discharged further from a outlet opening (31) of the nozzle slot (30),
characterized in that the flow communication between said at least one feed chamber (12) and the nozzle slot (30) pertinent thereto is established in the method
15 by means of feed holes (14; 18) made in one of the feed chamber walls, through which the coating material is capable of being passed to the nozzle slot, and that the nozzle unit is provided with elements (15, 16; 19), whereby the effective area of the feed holes (14; 18) is adjustable for regulating the cross-profile of said at least one coating material layer.

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8. A method as set forth in claim 7, **characterized** in that between said at least one feed chamber (12) and the nozzle slot (30) pertinent thereto the method comprises the use of at least one equalizing chamber (13, 13b), which also extends lengthwise (W) of the coater and into which equalizing chamber the feed holes (14; 18) open.
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9. A method of coating a paper/board web with a plane-fed curtain coater, comprising a nozzle beam (40) provided with at least two feed chambers (12) and nozzle slots (30) in connection therewith for feeding respective layers of coating
30 material onto a flow plane (35) established by the nozzle beam (40),
characterized in that the method comprises determining the cross-thickness profile of at least one coating material layer (2) on top of the flow plane (35) downstream of the feed slot (30) associated with the discussed layer, and that, on the basis of the thus discovered cross-thickness profile of said at least one coating

material layer (2), the feed rate of the coating material layer from the feed chamber (12) to the feed slot (30) is subjected to a manipulation profiled crosswise of a web (W) to achieve a desired cross-profile for said at least one coating material layer.

- 5 10. An arrangement for conducting a method as set forth in any of claims 1-9,
characterized in that the arrangement comprises measuring elements for
measuring the cross-thickness profile of said at least one single coating material
layer essentially across the entire width of a web (W) on top of a flow plane (35),
and that the arrangement comprises regulating elements for regulating the feed
10 rate of a coating material for said at least one coating material layer in a cross-web
profiled manner on the basis of data received from said measurement to achieve a
desired cross-profile for a coating material layer (2).